

**PROGRESS REPORT OF  
WOLF POPULATION MONITORING  
IN WISCONSIN  
FOR THE PERIOD  
APRIL - SEPTEMBER 2003**

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**ABSTRACT**

Twenty-one wolves were live captured and radio tagged in Wisconsin in spring and summer 2003. At least 94 packs (groups of 2 or more wolves) occurred in the state in spring 2003. At least 58 wolves with radio collars or ear transmitters were monitored in the state by the Wisconsin DNR during the study period. Five of these wolves died, and three signals were lost. Howl surveys were conducted in at least 44 packs and pups were detected in at least 25 packs. Reports of wolf observations were reported from 27 Wisconsin counties during spring and summer. Seventeen wolves were trapped and euthanized from five farms with depredation on livestock. Wolves killed 13 cattle, 23 sheep, and 4 dogs, and injured 3 dogs.



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## INTRODUCTION

Wolves recolonized Wisconsin in the mid 1970's after an absence of about 15 years (Wydeven et al 1995). The Wisconsin Department of Natural Resources (DNR) has monitored wolves since 1979, and population monitoring efforts were reinforced in the 1989 recovery plan (Wisconsin DNR 1989). Monitoring in spring and summer consisted of live trapping, radio collaring, radio tracking and howl surveys. Winter monitoring includes snow tracking of wolves, radio tracking of collared wolves, and estimations of the state wolf population (Wisconsin DNR 1999). Surveys from winter 2002–2003 indicated a state wolf population of 335–354 wolves, including 328–347 wolves outside of Indian Reservations (Wydeven et al. 2003). Because this was the second year with more than 250 wolves outside Indian Reservations, the Wisconsin DNR began efforts to delist wolves from the state threatened species list in fall 2003. The U.S. Fish and Wildlife service down listed wolves in Wisconsin from federally endangered to threatened on 1 April 2003 (Federal Register Vol. 68, # 62). Therefore, authority was provided the state of Wisconsin and tribes to use lethal control on problem wolves. This was the first season lethal control was available for removing depredating wolves.

The current report covers wolf population monitoring activity from April through September 2003, as well as depredation management activity during the period.

## ACKNOWLEDGEMENT

Many people assisted with wolf population monitoring in Wisconsin. DNR pilots who tracked collared wolves included Phil Miller, John Bronson, Joe Sprenger, Mike Weinfurter, Paul Anderson and Dan Cardinal. Dick Thiel, with help from Wayne Hall and other staff at the Sandhill Wildlife Area coordinated wolf monitoring in central Wisconsin. Graduate student Ellen Heilhecker of the University Wisconsin – Stevens Point studied pup movement and mortality factors in central Wisconsin with Professor Eric Anderson. Jason Hawley of central Michigan University studied wolf reactions to dog shock collars as a means for depredation reduction with Dr. Thomas Gehring. Jane Wiedenhoeft coordinated data entry and summarized survey information. Kerry Beheler and Julie Langenberg coordinated health monitoring of wolves. Ron Schultz, Buck Follis, Adrian Wydeven, Todd Naas, and Greg Kessler conducted wolf trapping in northern Wisconsin with the help of Rich Wissink, John Rafferty, Dick Koch, Leslie Wilson, Theresa Susanj, Adam Foster, Tom Matthiae, Scott Hassett, Kathy Moe, Felicia Fawcett, Mike Ravet, Melani Hanson, and Ron VanderVelden. Wolves found dead in the field were examined at the National Wildlife Health Center in Madison by Dr. Nancy Thomas and Valerie Bochsler, and coordinated through Dr. Grace McLaughlin. Randy Jurewicz coordinated carcass transport and distribution. Dr. Dorothy Ginnett conducted research on heartworm in wolves. USDA – Wildlife Service persons were involved in investigating wolf depredation, providing advice to owners of domestic animals, and trapping problem wolves under the direction of Bob Willging (northern Wisconsin) and Scott Beckerman (southern and central Wisconsin), and included Barry Benson, Phil Peterson, Jim Rollman, Ed Zydzik, Eric Fromm, Kelly Thiel, Dave Ruid, Dan Hirschert, Jeremy Irish, Jim Miller, Mike Haen, and DeWayne Snobl. Sandy Plyer typed this report. Other volunteers included Cindy Mueller, Nancy Warren, Pam Troxell, Chris Giese, Norm Poulton, Scott Pearson, and others.

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## METHODS

Wolves were live trapped and radio collared following procedures of Mech (1974) and Wydeven et al. (1995). Trapping was done from early May through mid–September. Ellen Heilhecker and Eric Anderson conducted a study of pup movement and mortality in central Wisconsin by fitting ear–mounted radio transmitters on wolf pups captured between July–September. Wolf pups were located daily from ground by radio telemetry, and because the life expectancy for transmitters lasted six months, monitoring was planned only to mid-January. The detailed methods and results of this study will be reported elsewhere.

Jason Hawley and Tom Gehring conducted research on potential use of shock collars to deter wolves from specific areas. They placed shock collars on 4 different wolves in 3 packs that were also fitted with radio collars. Two of these were fitted with GPS collars, and the other 2 received traditional VHF collars. Radio collared wolves with shock collars were contrasted with collared wolves that did not have shock collars. Sites were established in shock collared and non–shock collared packs using road killed deer to attract wolves to the sites. Shock collars with remote triggering devices were used to deter wolves from these sites during portions of the study. Details of methods and results of this study will be reported elsewhere.

Home range area for the summer period (15 April – 14 September) was determined from the minimum convex polygon (Mohr 1947). Isolated radio locations over 5 km from other points were considered extra-territorial moves as done by Fuller (1989). When 2 separate clusters of radiolocations existed with regular travel between them, areas in between were considered part of the home range regardless of distance, as long as both clusters did not occur in another pack territory. Home range areas were calculated for wolves that occupied stable areas, and did not include wolves that were dispersing.

Howl surveys (Harrington and Mech 1982) were used to determine pup production, location of rendezvous sites, summer location of non-collared packs, and to determine the presence of new packs. Howl surveys are useful for determining occurrence of wolves and presence of pups, but are not reliable for an accurate count of wolves beyond 2-3+ pups and 2-3+ adults (Harrington and Mech 1982).

## RESULTS AND DISCUSSION

Twenty-one wolves were live captured and radio tagged in spring and summer 2003 (Table 1). Wolves were captured from 17 different packs in the state, including 12 packs in northern Wisconsin and 5 packs in central Wisconsin. Only 2 pups were captured in northern Wisconsin, but only 1 of seven captured in central Wisconsin was not a pup. Ellen Heilhecker was focusing on capture of pups in central Wisconsin. Five wolves captured in northern Wisconsin (994M, 996M, 469M, 481M, and 482M) were also fitted with shock collars as part of research by Jason Hawley. Total captures included 9 males (average weight 83.4lbs. S.D. 7.4), 2 adult females (both 68lbs.), 2 yearling females (52 and 56lbs.), 2 male pups (38 and 53lbs), and 5 female pups (26 to 36lbs).

Figure 1 illustrates packs in the state during winter 2002-2003, and does not include new territories including the following: Clam River in Burnett/Polk counties, Frog Creek in Washburn/Douglas/Sawyer county, and Martin Marsh in Jackson county. Five packs may have been reduced or eliminated by

depredation control trapping including: Moquah, Orienta Falls, Mondeaux Flowage, Riverside, and Blue Hills packs. Thus there were probably about 95 packs or groups of two or more wolves in the state in late summer 2003.

During spring and summer 2003, 58 different radio tagged wolves were monitored in Wisconsin by the DNR (Table 2). Wolves were monitored in 40 packs across the state, including 32 in northern Wisconsin and 8 packs in the central forest. Two of the monitored wolves occupied territories in Minnesota (388M, and 434M). Five wolves died during the period (241F, 370F, 431F, 476M, 412F) and radio signals were lost on 4 wolves (996M, 246M, 291M, 309F). Thus 49 wolves were on the air in early fall including 35 in northern Wisconsin 12 in central Wisconsin, and 2 in Minnesota. Wolves monitored by radio telemetry during spring and summer 2003 include 20 adult males, 25 adult females, 1 yearling male, 4 yearling females, 3 pup males, and 5 pup females.

Mean home range area for adult wolves with 20 or more locations in summer was 33 miles<sup>2</sup> (n=19, range 4 to 79 miles, Table 3). Smallest home range was for wolf 036F (West Firelane), who probably spent most of the summer near den and rendezvous sites. The largest home range was for female 432F of the Butler Rock pack who recently occupied this area, and apparently did not have any pups.

### Wolf Pack Summaries

Listed below are summaries of spring and summer surveys of Wisconsin wolf packs across the state (nicknames used in the field for wolves are listed in Appendix II). Pack locations are shown on Figure 1 and correspond to numbers in parentheses following pack name. Pack names and corresponding map numbers are also listed in Appendix I.

*Northern packs and map numbers (in parentheses).*

#### Ada Lake Pair – Langlade and Forest Co. (71):

Two wolves last winter; no response on single howl survey; no collared wolves; one possible depredation on calf in June.

#### Alvin Creek Pair – Forest Co. (73):

Two wolves last winter; 5-6 pups responded on howl survey; no collared wolves.

#### Augustine Lake Pack – Ashland & Iron Co. (56):

Five wolves last winter; no howl surveys and no collared wolves; pups were probably present.

#### Averill Creek Pack – Lincoln Co.(64):

Four or five wolves last winter; male pup 489M captured 23 August and yearling female 485F captured 7 September; 3+ pups heard on north area and 2+ pups heard on south portion; pack is possibly splitting into two groups.

#### Bearsdale Pack – Bayfield Co.(21):

Four wolves last winter; no howl survey and no collared wolves this period.

#### Beaver Dam Lake Pair – Ashland Co.(31):

Two or three wolves last winter; no surveys this period; no collared wolves.

#### Bibbion Swamp – Bayfield Co. (25):

Eight wolves last winter; no survey this period; no collared wolves; yearling female with mange and blindness euthanized on 19 May; some reports of bold behavior by this pack.

#### Bird Sanctuary Pack - Douglas Co. (11):

Five wolves last winter; adult female 447F occupied summer home range of 34 mile<sup>2</sup> (21 locations); 2 pups observed in the pack.

#### Black Lake Pack – Ashland & Sawyer Co. (34):

Four or five wolves last winter; alpha female 370F found dead on 29 April from unknown causes, but possibly killed by other wolves; adult male 462M caught on 1 June, occupied 26 mile<sup>2</sup> home range (16 locations); no howl survey.

Blue Hills Pack – Rusk & Barron Co. (16):

Two wolves last winter; no howl survey but 3 pups observed; no collared wolves; 4 calves killed in spring, and hound killed on 26 July; alpha female trapped and euthanized on 28 May; possibly 2 packs now occupy Blue Hills area.

Bootjack Lake Pack – Oneida & Price Co. (52):

Seven or eight wolves last winter; yearling female 466F captured 2 July 2003; 3+ pups heard on 2 howl surveys.

Brush Creek Pack – Ashland Co. (33):

Seven wolves last winter; no collared wolves; no pups heard in one survey.

Camp 6 Pair – Marinette & Forest Co. (75):

Two wolves last winter; no collared wolves; one howl survey and no pups heard.

Casey Creek Pack – Douglas Co. (8):

Five wolves last winter; no collared wolves; no howl surveys, but pup production suspected.

Chain Lake Pack – Douglas & Washburn Co. (18):

Five wolves last winter; adult male 291M lost after 12 August 2003 after 4+ years monitoring and at 6+ years old; summer home range of 291M 37 mile<sup>2</sup> (16 locations); no howl surveys.

Chippewa River Pack – Ashland & Iron Co. (57):

Six wolves last winter; adult male 351M occupied a summer home range of 25 mile<sup>2</sup> (21 locations); no howl surveys but pup production suspected.

Clam Lake River Area – Burnett & Polk Co.

Last spring adult female 460F settled into Clam River area south of Siren; it was not clear if she joined another wolf; no wolves heard in single howl survey.

Crex Meadow Pack – Pine (MN) & Burnett Co. (14):

Three wolves last winter; adult male 388M occupied summer home range of 29 mile<sup>2</sup> (21 locations) completely in Minnesota; pack may be establishing mainly in Minnesota; no howl survey this period.

Crotte Creek – Douglas Co. (12):

Two wolves last winter; no collared wolves; no howl survey this period.

Dunbar Pack – Marinette & Florence Co. (77):

Four or five wolves last winter; adult male 474M captured 19 May and occupied 18 mile<sup>2</sup> area (18 locations); 4 pups heard and observed in pack.

Eastside Firelane Pack – Ashland Co. (55):

Four wolves last winter; no collared wolves; no howl survey.

Echo Valley Pack – Bayfield Co. (30):

Four wolves last winter; live trapping attempted but unsuccessful; no howl survey, but pup production suspected.

Eddy Creek Pack – Sawyer Co. (44):

Two wolves last winter; no collared wolves; no howl survey this period.

Escanaba Lake Pack – Vilas Co. (68):

Two wolves detected last winter; no collared wolves; no howl survey this period.

Flag River – Bayfield Co. (28):

Four wolves last winter; adult male 438M occupied a 24 mile<sup>2</sup> area and his mate 439F occupied 14 mile<sup>2</sup> (21 locations each); howl surveys were not conducted, but pups suspected.

Frog Creek Pack – Washburn, Douglas & Sawyer Co.:

This pack was not recorded last winter, but appeared to re-establish with dispersal of adult female 446F into this area; wolf 446F occupied a 53 mile<sup>2</sup> area (20 locations); 2 howl surveys in adjacent Chippanazie Lake where 2 or 3 pups were heard, may have been from this pack.

*Ghost Lake Pack – Bayfield & Sawyer Co. (19):*

Three to five wolves detected last winter; no collared wolves or howl surveys occurred in the pack during the period, but pups may have been produced.

*Giant Pine Pack – Forest Co. (70):*

Three wolves detected last winter; wolf 458F adult female settled into this area last winter; she occupied a 62 mile<sup>2</sup> area during summer (21 locations), but her home range seemed to shift south of the pack territory; no pups were heard on 2 howl surveys.

*Harrison Hills – Lincoln Co. (65):*

Two wolves detected last winter; last winter wolf 246M (adult male) abandoned the territory in late November 2002 after death of adult female 300F; no collared wolves occurred in the territory this period; no pups were heard on one howl survey; this pack may have gone extinct.

*Haystack Corner Pack – Sawyer Rusk Co. (46):*

Five wolves detected last winter; no collared wolves this period; 4 or 5 pups heard on howl survey; depredation on hounds used for bear hunting occurred on 16 July, 23 July and 30 August; the pack had also killed a hound used for coyote hunting in February 2003.

*Hellhole Creek Pack- Bayfield & Ashland Co. (32):*

Five wolves detected last winter; adult female 444F occupied 29 mile<sup>2</sup> area (20 locations); 4 or 5 pups heard on howl survey.

*Hoffman Lake Pack – Iron, Price and Ashland Co. (54):*

Five wolves detected last winter; no collared wolves during period; no pups heard during 2 howl surveys, but 2 pups observed in pack.

*Hungry Run – Ashland Co. (38):*

Four or five wolves detected last winter; no collared wolves in pack; no wolves heard on howl survey, but one observed; no wolves captured on live trapping attempt.

*Ino Swamp – Bayfield Co. (24):*

Five wolves detected last winter; no collared wolves; no howl survey, but pup production suspected.

*Johnson Springs Pair – Forest Co. (72):*

Two wolves detected last winter; no collared wolves although 458F approached western portions of area; no howl survey this period

*Kidrick Swamp – Taylor & Price Co. (49):*

Four wolves detected last winter; no collared wolves; no pups heard on single howl survey, but pup production suspected.

*Lake Nebagamon Pack – Douglas Co. (7):*

Five wolves detected last winter; no collared wolves, and no howl surveys this period.

*Lake Noquebay Pair – Marinette Co. (78):*

Two wolves detected last winter; no collared wolves; no howl survey this period.

*Little Rice River Pack – Oneida Co. (61):*

Six wolves detected last winter; alpha male 355M occupied a 46 mile<sup>2</sup> area in summer (21 locations); 3 or more pups were heard on 3 howl surveys in this area.

*Log Creek Pack - Price, Sawyer, and Ashland Co. (39):*

Four or five wolves detected last winter; no collared wolves; one pup was observed in this pack territory.

*Long Lake Pair – Rusk Co. (80):*

Two wolves detected last winter; adult female (2 years old) 393F and her mate occupied a 17 mile<sup>2</sup> area (20 locations); no howl surveys were conducted, but pup production was not suspected.

*Mondeaux Flowage Pack – Taylor Co. (50):*

Two wolves detected; no collared wolves; no pups were heard in 5 howl surveys, but one pup male was caught and euthanized at a depredation farm on 29 August; the pack killed 4 sheep on a farm in April–May, and a cow and calf on a farm in late July resulting in capture and euthanization of one wolf.

Moose Lake Pack – Douglas Co. (5):

Six wolves detected last winter; adult male 473M caught on 29 June and occupied a summer area of at least 11 mile<sup>2</sup> (11 locations); no howl survey, but pup production suspected.

Moquah Pack – Bayfield Co. (27):

Three wolves detected last winter; adult female occupied a 34 mile<sup>2</sup> area (18 locations) prior to capture at a depredation site on 16 August; 5 pups were removed from this pack during control actions; the pack killed a calf on a farm where 3 calves had also been killed in January–February; 3 adults (431F, 2 adult males) and 5 pups (3males, 2 females) were trapped and euthanized from the farm in August; possibly 1 or 2 new wolves have moved into the Moquah area.

Moreland Lake – Bayfield & Douglas Co. (22):

Five wolves detected last winter; adult female 464F captured on 16 May, occupied a 53 mile<sup>2</sup> area (17 locations); no howl surveys were conducted, but pup production was suspected.

Morgan Lake Pack – Florence & Forest Co. (74):

Two or more wolves detected last winter; no collared wolves; no howl survey this period.

Morrison Creek Pack – Ashland & Iron Co. (41):

Three wolves detected last winter; no collared wolves; no howl surveys this period.

Murray's Landing Pack – Iron Co. (53):

Four to six wolves detected last winter; adult males 481M and 469M were captured on 7 July and 6 August respectively; 481M occupied at least 14 mile<sup>2</sup> (11 locations) and 469M occupied at least 5 mile<sup>2</sup> (7 locations), but both were on the air for a short time to detect the full range of pack area; three or four pups were heard on a howl survey; the pack injured a hound near a residence south of Mercer on 21 June, and adult male 469M and 481M were fitted with shock collars along with radio collars to keep them away from the residence area.

Nineweb Lake Pack – Vilas Co. (69):

Two wolves detected last winter; no collared wolves; no pups heard on single howl survey.

North Empire Pack – Douglas Co. (3):

Five wolves detected last winter; no collared wolves; no howl surveys this period.

North Willow Pack – Oneida Co. (60):

Seven wolves detected last winter; yearling female 461F who may be a wolf-dog hybrid occupied a 15 mile<sup>2</sup> area (21 locations); three or more pups detected in one howl survey. Adult males 482M and 996M were captured and fitted with radio and shock collars on 10 June and 13 June respectively; both were used in a study of use of shock collars for aversive conditioning of wolves. Wolf 996M fitted with a GPS collar was monitored from 13 June to 18 August in a 27mile<sup>2</sup> home range (11 locations) until his collar was dropped. Wolf 482M occupied a 23 mile<sup>2</sup> area (14 locations) during the remainder of the period. Both male home range areas overlapped the home range area of 461 F.

O'Brien Lake Pack – Iron Co. (59):

Three wolves detected last winter; no collared wolves; wolves heard on a howl survey; the dog of a minnow trapper was injured on 22 May in the pack area.

Oconto River Pack – Oconto & Menominee Co. (79):

Three wolves detected in last winter/early spring; yearling male 449M occupied 6 mile<sup>2</sup> area (20 locations), yearling female 452F occupied 7 mile<sup>2</sup> (19 locations), adult female 454F occupied 8 mile<sup>2</sup>, and all 3 home range areas overlapped extensively. Pack members visited the release site on the Menominee Reservation in early spring. These 3 wolves represent the remainder of a pack of 7 translocated into the Menominee Reservation in August 2002 after depredations in Langlade County. No new depredations have occurred since the translocation.

Oriente Falls Pack – Douglas & Bayfield Co. (9):

Two wolves detected last winter; no collared wolves; no howl surveys conducted. On 22 and 23 August, 10 sheep were found killed on a farm, and on 24 August an adult male, pup male, and pup female were captured and euthanized on the farm.

Pelican Lake Pack – Oneida Co. (66):

Two wolves detected last winter; adult female 332F occupied a 41mile<sup>2</sup> area in summer (21 locations); no howl surveys were conducted, but pups may have been produced.

Pike River Area – Marinette Co. (not mapped):

Wolf 336M (adult male) left the Bootjack Lake Pack in Oneida Co. after 10 March 2003 and he was initially detected in Marinette Co. on 24 July 2003. By the end of the summer period he seemed to have settled into an area along the Pike River south of the Dunbar Pack. Wolf 336M was not usually observed in summer, thus it was not known if he joined an existing pack.

Pine Lake Pack – Iron Co. (58):

Three wolves detected last winter; adult female 448F occupied a 48 mile<sup>2</sup> area (21 locations); three or more pups were heard in a howl survey in this pack.

Pokegama River Pair – Douglas Co. (1):

Two wolves were detected in this area last winter; no collared wolves or howl surveys in this pack during the period; a beagle dog running near a cabin was injured by this pack on 27 May.

Poplar River Pair – Douglas Co. (10):

Two wolves were detected in this area last winter; no collared wolves; no howl surveys.

Porcupine Lake Pack – Bayfield Co. (26):

Three or more wolves were detected in this pack last winter; adult female 281F occupied a 42 mile<sup>2</sup> area before being killed by a vehicle on 6 August, having been on the air for 5 years 8 ½ months; no howl surveys conducted.

Price Creek Pack – Price Co. (43):

Three wolves detected last winter; no collared wolves; no howl surveys this period.

Rainbow Lake Pack – Bayfield Co. (23):

Four wolves detected last winter; no collared wolves; 2 or more pups heard in a howl survey.

Ranger Island Pack – Lincoln Co. (63):

Four wolves detected last winter; adult male 994M was captured on 20 July and male pup 479M was captured on 23 August 2003; two or three pups were heard on a howl survey; male 994M was fitted with a shock collar, along with radio collar to test the ability of shock collars for aversive conditioning of wolves.

Riverside Pack – Burnett Co. (13):

Two wolves were detected last winter; no collared wolves; no howl survey this period; this pack may have been involved in depredation on 2 farms resulting in deaths of 3 calves; 2 adult males and 1 adult female were trapped and euthanized on 26 July; possibly depredators at this site were from additional packs as well.

Round Lake Pack – Sawyer Co. (35):

Two wolves occurred in this area last winter, adult male 457M occupied a 42 mile<sup>2</sup> area (19 locations); no howl surveys were conducted, but pup production was suspected.

Shanagolden Pack – Ashland Co. (37):

Three wolves detected last winter; no collared wolves; no howl surveys this period.

Shoberg Lake Pack – Douglas Co. (6):

Three or four wolves last winter; no collared wolves; no wolves heard on howl survey.

Siskiwit Lake Pack – Bayfield Co. (29):

No wolves detected in this pack area after the adult female died last winter; scouting and trapping efforts in summer indicated that 1 or 2 wolves had recolonized this area.

Skinner Creek Pack – Price Co. (47):

Three or four wolves were detected in this pack last winter; no collared wolves this period; two or more pups heard on a howl survey.

Smoky Hill pack – Bayfield & Sawyer Co. (20):

Three wolves detected last winter; no collared wolves; no wolves heard on single howl survey, but pup production suspected.

Somo River Pack – Lincoln Co. (6):



Four wolves detected last winter; 3+ pups heard in howl survey; adult female 456F who joined this pack last winter occupied 13 mile<sup>2</sup> area (21 locations) on the northern edge of this territory; but did not seem integrated.

*South Empire Pack – Douglas Co. (4):*

Three wolves were detected in this pack last winter; no collared wolves in pack; no howl surveys this period.

*Spirit Lake Pack – Lincoln, Taylor & Price Co. (51):*

Six wolves detected last winter; no collared wolves; no howl surveys, but pup production suspected

*Spring Creek Pack – Price Co. (48):*

Two wolves detected last winter; no collared wolves; no pups heard in a single howl survey; 9 sheep (lambs) were apparently killed by this pack in August, but no wolves were caught in attempted trapping.

*Stella Lake Pack – Oneida Co. (67):*

Three wolves detected last winter; no howl surveys conducted; adult female 376F occupied a 12 mile<sup>2</sup> home range (21 locations).

*Sterling Barrens Pack – Burnett & Polk Co. (15):*

Three wolves detected last winter; no collared wolves in pack; no howl surveys conducted but 2 pups observed in the pack.

*Thornapple River Pack – Sawyer Co. (42):*

Six wolves detected last winter; 2-3 or more pups heard on a howl survey.

*Torch River Pack – Ashland Co. (36):*

Five or six wolves detected last winter; adult male 248M occupied a 37 mile<sup>2</sup> area (20 locations); 3 or more pups heard on a howl survey.

*Tranus Lake Pack – Washburn Co. (17):*

Two Wolves detected last winter; no collared wolves; no howl surveys this period.

*Truck Trail Pack – Douglas & Pine Co. (2):*

Three wolves in pack last winter; no howl surveys this period; adult male 476M captured on 21 June occupied a 45 mile<sup>2</sup> area (9 locations) before dying from unknown causes on 25 August.

*Tupper Creek Pack – Sawyer Co. (45):*

Two wolves in pack last winter; no collared wolves; no howl surveys this period.

*West Firelane Pack – Ashland & Iron Co. (40):*

Two wolves in pack last winter; adult female 036F occupied a 4 mile<sup>2</sup> area (20 locations); no howl surveys were conducted, but pup production was suspected.

**Central Forest Packs**

*Bear Bluff Pack – Jackson, Wood & Juneau Co. (86):*

Five or six wolves detected last winter; adult female 311F was recaptured on 1 August, and female pups 412F and 413F were captured 30 July and 5 August respectively; Adult female 426F on the air throughout the period occupied at least 8 mile<sup>2</sup> (13 locations), and wolf 311F occupied 17 mile<sup>2</sup> (10 locations); wolf pup 412 died on 8 August apparently from disease.

*Colburn Swamp Pack – Adams (94):*

Two wolves detected on this area last winter; no collared wolves occurred in the pack; no wolves were heard on a howl survey.

*Dead Creek Pack – Jackson & Juneau Co. (88):*

Two to four wolves detected last winter; a female pup 411F captured and radio tagged on 23 July; at least 4 pups were heard howling in this pack on a howl survey.

*Eau Claire River Pack – Clark & Eau Claire Co. (81):*

Two wolves detected last winter; no collared wolves in the pack; 5 or more pups were heard in the pack on howl surveys.

*Ft. McCoy pack – Monroe Co. (92):*

Five wolves detected in this pack last winter; adult 465F was located only 2 times aerially during the period, but was being tracked on the ground by staff in the Fort; 2 wolf pups were heard during howling surveys. Members of the pack created some concerns by roaming a farm east of the Fort, no actual depredations occurred.

Iron Run Pack – Clark Co. (82):

Four wolves detected last winter; 309F was aurally located only 4 times in the summer before going off the air after 28 July 2003; 4 or more pups were heard during howl surveys.

Martin Marsh area - - Jackson Co. (no map location):

Adult female 429F drifted north of the Wildcat Pack and raised pups along 54 north of the Wildcat Mound Pack; Wolf 429F occupied an 8 mile<sup>2</sup> area (13 locations); 3 or more pups were heard and observed in the area; female pup 415F was captured and radio tagged on 29 August.

Mead Wildlife Area Pack – Wood & Portage Co. (95):

Two wolves were detected last winter; no collared wolves; no pups heard in howl surveys.

Noch Hanai Pack – Jackson & Clark Co. (84):

Two wolves detected last winter; no collared wolves; no howl surveys conducted.

Rattail Pack - Juneau & Wood Co. (89):

Two wolves last winter; adult male 338M occupied 30 mile<sup>2</sup> (13 locations), and adult female 340F occupied 32 mile<sup>2</sup> (13 locations), and both overlapped extensively; no howl surveys conducted, but possible pup production.

Seneca Pack – Wood Co. (93):

Two wolves detected last winter; adult female 341F occupied a 5 mile<sup>2</sup> area (13 locations); female pup 414F caught on 10 August, and probably other pups were produced.

Silo Pack – Juneau Co. (91):

Five wolves detected last winter; no collared wolves; no howl survey this period.

South Bluff Pack – Wood Co. (87):

Two or three wolves detected last winter; no collared wolves; no howl survey.

Suk Cerney Pack – Juneau Co. (90):

Only two wolves appeared left in this pack last winter and with death of adult male 443M on 27 May the pack seemed to disappear.

Wedges Creek Pack – Clark Co. (83):

Two wolves last winter; no collared wolves; no howl surveys.

Wildcat Mound Pack – Jackson Co. (91):

Four wolves detected last winter; a male pup 416M was captured on 9 September 2003; 4 or 5 wolves were heard in 2 howl surveys in the pack.

Dispersing and Translocated Wolves

Wolf 246M: This adult male had been the alpha male in the Harrison Hills Pack of northeast Lincoln County. After the pack female 300F was killed about 27 November 2002. Wolf 246M began to roam widely. He occupied a 33 mile<sup>2</sup> area west of the Pelican Lake Pack during summer, but his signal was lost after 24 July 2003 in the northern part of the Harrison Hills area.

Wolf 336M: This adult male was lost from the Bootjack Lake Pack west of Oneida County after 10 March 2003. He was re-discovered in Marinette County on 24 July, 87 miles to the east. He spent the summer roaming northern Marinette County and southern Florence County. By late summer he seemed to settle along the Pike River area south of the Dunbar Pack.

Wolf 343M: An adult male that seemed to settle in the Seneca area of Wood County was lost after 5 March 2003. He was killed by a vehicle in northeast Portage County on 22 April, 22 miles to the north.

Wolf 409M: A male pup was captured in the Wildcat Mound Pack in Jackson County on 10 September 2002. He was monitored in this pack area until 15 January, when monitoring was discontinued. The wolf was found as a yearling in Randolph County, Indiana on 27 June 2003, shot to death in a soybean field 12 miles from the Ohio border. The minimum distance between

locations was 407 miles, but this line passes through Lake Michigan, thus the actual distance was probably at least 420 miles. Possibly the wolf traveled around the subways of Chicago in his travels.

*Wolf 442M:* This adult male had been alpha in the Suk Cerney Pack in the Necedah Wildlife Refuge. In winter 2002–2003 he was displaced east of the refuge 5–6 miles away into western portions of the Petenwell Flowage (Wisconsin River). He was last located by radio on 5 March 2003 east of Necedah. He was found dead along Petenwell Flowage from unknown causes on 27 May 2003, 5 miles north of his last radio location.

*Wolf 456F:* This adult female was translocated into southwest Vilas County as a depredating wolf on 25 July 2002. In fall 2002, she seemed to settle into the Somo River Pack area, 29 miles to the south in northwest Lincoln County. During summer 2003 it appeared the wolf only occupied the northern portions of the territory along Highway 8. Thus the wolf apparently has not fully established in this pack.

*Wolf 458F:* This adult female was a depredating wolf that was released into southwest Vilas County on 7 October 2002. By late October she had settled into the Giant Pine Pack area, and in winter 2002–2003 seemed to have joined that pack. In summer 458F began using areas further to the south of the Giant Pine area, and possibly had not fully joined this pack.

*Wolf 460F:* This adult female was a depredating wolf released into southwest Vilas County on 1 November 2002. In mid April 2003, 460F settled into the Clam River area near Siren in Burnett and Polk Counties, and 112 miles west of the release site. Wolf 460F occupied a summer home range area of 38 mile<sup>2</sup>, but it was unclear if she had joined another wolf. The new home range was only 22 miles south of the farm where 460 had caused depredation, but she made no additional visits to the farm.

*Waukesha Male:* An adult male was killed in open farm/residential area south of Oconomowoc on 24 April 2003. This location is 107 miles southeast of the nearest breeding pack.

*Door County Male:* A yearling or adult male was shot to death in northern Door County on 23 May 2003. Although wolf reports have been received in Door County during the last two years, no packs are known to occur in the area. The nearest packs are only about 25 miles away in northern Michigan, but would require crossing Green Bay, a distance of 13 or more miles across. The nearest packs by land would be over 120 miles away. Possibly the wolf crossed the frozen bay in winter to travel to Door County.

*Spring Green Male:* A yearling male was killed by a vehicle in Sauk County north of Spring Green. The nearest breeding pack would have been 57 miles to the north. The wolf was on the northern edge of the Chronic Wasting Disease area of southwest Wisconsin. This is the first wolf discovered in this area, although currently there is no evidence that the disease can spread to carnivores.

## Summary of Howl surveys

Howl surveys were conducted in 44 packs and five areas where wolves were suspected (Table 4). About 77 to 83 pups were heard in 25 of 49 packs or groups or a mean of 3.1 pups per pack. Wolves were heard at 55 of 465 howl stops for a success rate of 11.8%. Thirty-five to forty-one pups were observed in 19 packs or 1.9 pups per pack. A total of 97 to 103 pups were detected in 35 packs or 2.8 pups per pack.

## Reported Wolf Observations

A total of 56 and 55 wolf observations were reported for the April–June and July–September periods in 2003, respectively (Table 5, Figure 2). This compares to 75 and 84 wolves last year for the same time period. This suggests that observation rates have declined or reporting rates have declined. Reports of probable and possible observations were received from 27 Wisconsin Counties, with highest rates for Iron (16), Marinette (13), Ashland (9), and Price (9) counties. This is the first time that a northeastern county was in the list of top counties for wolf observations.

### Wolf Mortality and Health

Thirty-five wolves, including 8 radio tagged wolves were found dead in Wisconsin during spring and summer 2003 (Table 6). Also a Wisconsin wolf (409M) was found dead in eastern Indiana 407 miles from its home area. Among 8 active radio tagged wolves, 2 died from vehicle collisions (25%), 1 died from disease (12%), 1 was euthanized in a depredation control action (12%), and 4 died from unknown causes (50%). Overall mortality included 17 trapped and euthanized at depredation sites (49%), 1 euthanized with disease (3%), 4 wolves shot illegally (11%), 8 died from vehicle collisions (23%), 1 wolf died from disease (3%), and 4 died from unknown causes (11%). Apparently, nearly half of the detected mortality was death of wolves at depredation sites.

Mange was detected in 6 of the 21 live captured wolves, and seemed most severe in 2 pups from the Bear Bluff pack and adult female 464F in the Moreland Lake pack. Rate of mange infestation appeared similar for central Wisconsin (2 of 7) and northern Wisconsin (4 of 14). Blood samples were collected from about half of captured wolves, but analysis was not completed.

### Wolf Depredation

Seventeen cases of wolf depredation on domestic animals occurred during the spring and summer period of 2003, and one case of concern occurred when wolves were observed near livestock and followed an ATV rider (Table 7). Total depredation included death of 13 cattle, 23 sheep, and 4 dogs, as well as injury to 3 dogs. Seven packs caused depredation on livestock and 5 depredated on dogs; only the Blue Hills pack attacked both a dog and livestock. Overall 12% of state packs depredated on domestic animals and 7% of packs caused depredation on livestock. The total of 10 farms affected was the same for this period in 2002 but kill on cattle declined from 33 to 13, and horses from 2 to 0, but sheep increased from 7 to 23. Depredation on dogs declined from 8 killed in 2002, to 4 in summer 2003.

Depredation control trapping by USDA Wildlife Services was conducted on 7 farms, and 17 wolves were removed and euthanized from 5 farms. Wolves removed from farms are listed in Table 6. Numbers trapped were slightly less than 2002 when 18 wolves were trapped 19 times, and 17 were translocated. Pyrotechnics were provided a landowner near Ft. McCoy where a pack roamed close to cattle and buildings. No verified depredation on livestock has yet occurred by wolves in the central forest.

### PLANS FOR NEXT STUDY PERIOD

Aerial monitoring of wolves will continue on a weekly basis, and a greater emphasis will be made to visually observe wolves from the air when snow covers the ground. Snow track surveys will be conducted by DNR and other agency trackers to determine distribution and abundance of non-collared wolf packs and packs rarely observed from the air. Training and guidance will be provided for over 100 volunteers that will assist with winter surveys; this will be the 9<sup>th</sup> year of the Wisconsin volunteer tracking program.

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*Note: This report is a preliminary progress report and should not be construed as a finalized publication. Some of the numbers of pack size, composition, population figures, and other information may change as more data becomes available. Persons wishing to cite figures within the report should consult with the authors.*